

## A P P E N D I X I:

THE LISTING OF CLAIMS:

1. (*previously presented*) A process for producing dry powders of one or more carotenoids by
  - a) dispersing one or more carotenoids in an aqueous molecular or colloidal solution of a mixture of lactose and a protective colloid, and optionally containing additional solvents, and
  - b) converting the dispersion formed in step a) into a dry powder by removing the water and the additional solvents and drying, optionally in the presence of a coating material,wherein at least one soybean protein is used as protective colloid in process step a).
2. (*original*) A process as claimed in claim 1, wherein the dispersion step a) comprises the preparation of a suspension of one or more carotenoids in an aqueous molecular or colloidal solution of a mixture of lactose and at least one soybean protein.
3. (*original*) A process as claimed in claim 2, wherein the suspension prepared in process step a) is ground before conversion into a dry powder.
4. (*original*) A process as claimed in claim 1, wherein the dispersion in stage a) comprises the following steps:
  - a<sub>1</sub>) dissolving one or more carotenoids in a water-miscible organic solvent or in a mixture of water and a water-miscible organic solvent or
  - a<sub>2</sub>) dissolving one or more carotenoids in a water-immiscible organic solvent and
  - a<sub>3</sub>) mixing the solution obtained as in a<sub>1</sub>) or a<sub>2</sub>) with an aqueous molecular or colloidal solution of a mixture of lactose and at least one soybean protein, resulting in the hydrophobic phase of the carotenoid as nanodisperse phase.
5. (*previously presented*) A process as claimed in claim 1, wherein at least one partially degraded soybean protein with a degree of hydrolysis of from 0.1 to 20% is used as protective colloid.
6. (*previously presented*) A process as claimed in claim 1, wherein the carotenoids used are oxygen-containing carotenoids.

7. (original) A process as claimed in claim 6, wherein the oxygen-containing carotenoids are compounds selected from the group consisting of astaxanthin, canthaxanthin, lutein, zeaxanthin, citranaxanthin and ethyl  $\beta$ -apo-8'-carotenoate.
8. (original) A process as claimed in claim 7, wherein
  - a) astaxanthin and/or canthaxanthin is dissolved in a water-miscible organic solvent or a mixture of water and a water-miscible organic solvent at temperatures above 30°C,
  - b) the resulting solution is mixed with an aqueous molecular or colloidal solution of a mixture of lactose and a partially degraded soybean protein with a degree of hydrolysis of from 0.1 to 20%, and
  - c) the dispersion which has formed is converted into a dry powder.
9. (original) A process as claimed in claim 8, wherein astaxanthin is used as carotenoid.
10. (previously presented) A carotenoid-containing dry powder obtainable by a process as defined in claim 1.
11. (original) A dry powder as claimed in claim 10 with a carotenoid content of from 0.1 to 30% by weight.
12. (previously presented) A dry powder as claimed in claim 10, comprising oxygen-containing carotenoids selected from the group consisting of astaxanthin, canthaxanthin, lutein, zeaxanthin, citranaxanthin and ethyl  $\beta$ -apo-8'-carotenoate.
13. (original) A dry powder as claimed in claim 12, comprising 5 to 20% by weight of astaxanthin.
14. (original) A dry powder as claimed in claim 12, comprising 5 to 20% by weight of canthaxanthin.
15. (previously presented) A human food, a pharmaceutical or an animal feed comprising the carotenoid-containing dry powder defined in claim 10 as an additive.
16. (new) A carotenoid-containing dry powder obtained by a process comprising
  - a) dispersing one or more carotenoids in an aqueous molecular or colloidal solution of a mixture of lactose and a protective colloid, and optionally containing additional solvents, and

- b) converting the dispersion formed in step a) into a dry powder by removing the water and the additional solvents and drying, optionally in the presence of a coating material, wherein at least one partially degraded soybean protein having a degree of hydrolysis of from 0.1 to 20% is used as protective colloid in process step a).
17. (new) The dry powder defined in claim 16 wherein stage a) of the process comprises
- a<sub>1</sub>) dissolving one or more carotenoids in a water-miscible organic solvent or in a mixture of water and a water-miscible organic solvent, or
  - a<sub>2</sub>) dissolving one or more carotenoids in a water-immiscible organic solvent, and
  - a<sub>3</sub>) mixing the solution obtained in a<sub>1</sub>) or in a<sub>2</sub>) with an aqueous molecular or colloidal solution of a mixture of lactose and at least one soybean protein, resulting in the hydrophobic phase of the carotenoid as nanodisperse phase.
18. (new) The dry powder defined in claim 17 wherein stage a) of the process comprises
- a<sub>1</sub>) dissolving one or more carotenoids in a water-miscible organic solvent or in a mixture of water and a water-miscible organic solvent at a temperature above 30°C, and
  - a<sub>3</sub>) mixing the solution obtained in a<sub>1</sub>) with an aqueous molecular or colloidal solution of a mixture of lactose and at least one soybean protein, resulting in the hydrophobic phase of the carotenoid as nanodisperse phase.
19. (new) The dry powder defined in claim 18 wherein the solution obtained in a<sub>1</sub>) is mixed with the solution of the mixture of lactose and the soybean protein at a mixing temperature of from about 35°C to 80°C.
20. (new) A human food, a pharmaceutical or an animal feed comprising the dry powder defined in claim 16.